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ABSTRACT

This study was conducted to identify the most salient organizational and personality factors contributing to burnout for elementary, intermediate, and secondary teachers; and to determine the pattern of causal predominance linking these stressors to burnout for each teacher group. Participants in the study, full-time elementary (N=599), intermediate (N=203), and (N=715) secondary teachers, responded to a series of questionnaires including the Maslach Burnout Inventory. An hypothesized model of burnout, based on replicated findings from the literature, was tested separately for each group of teachers using the analysis of covariance structures. Findings were consistent across groups in revealing the potency of role conflict, work overload, classroom climate, decision-making, and peer support as the primary organizational determinants of teacher burnout. Findings also emphasized the key positions held by self-esteem and external locus of control as important mediators of teacher burnout. Findings related to causal structure among the emotional exhaustion, depersonalization, and personal accomplishment facets of burnout make it clear that interpretation of burnout as a unidimensional construct is not meaningful. (LL)

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Investigating Causal Links to Burnout for Elementary, Intermediate, and Secondary Teachers

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Abstract

The study investigated the impact of (a) organizational factors that included role-based (role ambiguity, role conflict), task-based (work overload, classroom climate), and environment-based (decisionmaking, superior support, peer support) variables, and (b) personality factors (self-esteem, external locus of control) on the emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) facets of burnout within one conceptual framework. Participants were fulltime elementary (n=599), intermediate (n=203), and (n=715) secondary teachers. An hypothesized model of burnout, based on replicated findings from the literature, was tested separately for each group of teachers using the analysis of covariance structures. Findings were remarkably consistent across groups in revealing (a) the potency of role conflict, work overload, classroom climate, decisionmaking, and peer support as the primary organizational determinants of teacher burnout, and (b) the key positions held by the self-esteem and external locus of control as important mediators of teacher burnout. Findings related to causal structure among the EE, DP, and PA facets of burnout make it clear that interpretation of burnout as a unidimensional construct is not meaningful.

Investigating Causal Links to Burnout for Elementary, Intermediate, and Secondary Teachers

The purposes of the present study were twofold: (a) to identify the most salient organizational and personality factors contributing to burnout for elementary, intermediate, and secondary teachers, and (b) to determine the pattern of causal predominance linking these stressors to burnout for each teacher group.

A review of the literature makes it evident that teacher burnout is a function of the quality of worklife in the educational institution (Cunningham, 1982, 1983; Cedoline, 1982; Farber, 1991). However, before an effective solution to the burnout problem can be effectively implemented, a thorough understanding of the syndrome must be known. Unfortunately, methodological limitations of most burnout research has obviated this endeavour (Einsiedel & Tully, 1981; Freudenberger, 1983; Gold, 1984; Handy, 1988; Jackson, Schwab, & Schuler, 1986; Maslach & Jackson, 1984; Meier, 1983; Perlman & Hartman, 1982). Construct validity research bearing on the nomological network of burnout is urgently needed in order to assess the impact of (a) relations between burnout and other constructs with which it is theoretically and empirically related (between-network relations), and (b) relations among the dimensions of burnout itself (within-network relations). Implicit in the conduct of between-network research, in particular, is the specification and testing of causal linkages among related

constructs.

The research of Maslach and colleagues in validating a three-dimensional structure of burnout is now well-known (for a summary, see Maslach & Jackson, 1984). For teachers, the three elements of burnout -- emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA), have been empirically validated at the elementary, intermediate, and secondary levels (e.g., Beck & Gargiulo, 1983; Friesen, Prokop, & Sarros, 1988; Friesen & Sarros, 1989; Gold, 1984; Iwanicki & Schwab, 1981; Jackson et al., 1986; Schwab & Iwanicki, 1982a, 1982b). Teachers exhibit signs of EE when they perceive themselves as unable to give to students, as they did earlier in their careers; of DP when they develop negative, cynical, and sometimes callous attitudes towards students, parents, and/or colleagues; and feelings of diminished PA when they perceive themselves as ineffective in helping students to learn, and in fulfilling other school responsibilities. Overall, teachers who fall victim to burnout are likely to be less sympathetic toward students, have a lower tolerance for classroom disruption, be less apt to prepare adequately for class, and feel less committed and dedicated to their work (Farber & Miller, 1981).

Researchers have posited that teacher burnout is a function of stressors engendered at both the organizational and personal levels (Cooper & Marshall, 1976; Farber, 1991; Ianni & Reuss-Ianni, 1983; Iwanicki, 1983; Perlman & Hartman, 1982). We turn now to a brief review of these factors.

Organizational Factors

Role conflict and role ambiguity have been shown to be important determinants of burnout for teachers (Cunningham, 1982, 1983; Kyriacou & Sutcliffe, 1977). Other contributing factors are work overload, poor classroom climate, low decisionmaking power, and little support from superiors and peers; empirical research related to each is now summarized.

Role conflict. Role conflict represents the simultaneous occurrence of two or more sets of pressures such that the compliance with one makes more difficult, compliance with the other (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). That teachers are increasingly confronted with conflicting demands is now well-documented (e.g., Blase, 1986; Cedoline, 1982; Greenberg, 1984; Edgarton, 1977; Farber, 1991; Iwanicki, 1983; Kyriacou & Sutcliffe, 1977; Litt & Turk, 1985; McLaughlin, Pfeifer, Swanson-Owens, & Yee, 1986; Phillips & Lee, 1980). Common examples of role conflict for teachers are (a) quantity of work to be done, and quality of work realistically possible within time constraints, (b) meeting the demands of overly large classes comprising students of diverse ability levels, and meeting the needs of individual students, and (c) taking positive action in resolving student disciplinary problems, and coping with negative or neutral support from administrators and parents.

Empirical findings have shown role conflict to be a critical factor in generating feelings of job stress among teachers

(Bensky, Shaw, Gouse, Bates, Dixon, & Beane, 1980; Jackson et al., Pettegrew & Wolf, 1982; Tosi & Tosi, 1970). Studies investigating the multidimensional aspects of burnout have reported role conflict to be significantly related to the EE and DP facets of the construct (Jackson et al., 1986; Schwab & Iwanicki, 1982b).

Role Ambiguity. Role ambiguity is associated with a lack of clarity regarding a worker's obligations, rights, objectives, status, and/or accountability; other contributing factors include increasing complexity of tasks and technology, and continued rapid organizational change (Farber, 1991). Often cited by teachers as prime contributors to feelings of job stress are: (a) unclear and inconsistent policies regarding student behavior, (b) required restructuring of curricula and pedagogical approaches in accordance to changing government mandates, and (c) the perception of being held in low esteem by students, parents, administrators, and the general public (Blase & Matthews, 1984; Cedoline, 1982; Farber, 1991; Ginsberg & Bennett, 1981; Holdaway, 1978; Iwanicki, 1983; Kyriacou & Sutcliffe, 1977; McLaughlin et al., 1986). Although there is some suggestion in the literature that role ambiguity may be less potent than role conflict (Schwab & Iwanicki, 1982b), it has generally been reported as an important determinant of burnout (Bacharach, Bauer, & Conley, 1976; Bensky et al., 1980; Pettegrew & Wolf, 1982; Schwab & Iwanicki, 1982b; Tosi & Tosi, 1970). At a multidimensional level, role ambiguity has been shown to influence EE and reduced PA (Schwab & Iwanicki, 1982b).

Work overload. Work overload comprises both quantitative and qualitative components (Cooper & Marshall, 1978; French & Caplan, 1973). Quantitative overload involves too many demands and too little time in which to meet them adequately. Qualitative overload refers to job complexity; work that is perceived as too difficult to complete satisfactorily. Teachers have consistently cited work overload as a major stressor in their job; important factors include: excessive paper work, oversized classes comprising students of heterogeneous academic abilities, and the need to teach courses which are outside one's particular skill area (Blase, 1986; Cedoline, 1982; Evers, 1987; Farber & Miller, 1981; Ginsberg & Bennett, 1981; Iwanicki, 1983; Kyriacou & Sutcliffe, 1977; Lortie, 1975; McLaughlin et al., 1986; Phillips & Lee, 1980; Sakarov & Farber, 1991; Weiskopf, 1980). These aspects of perceived work overload by teachers have been empirically tested and supported (Bensky et al., 1980; Cichon & Koff, 1980; Olson & Matuskey, 1982; Pettegrew & Wolf, 1982).

Classroom climate. Classroom climate bears critically on teachers' attitudes towards teaching (Cross, 1987; Holdaway, 1978). Thus, it is not surprising that any erosion of this climate leads to job stress. In particular, student discipline problems, student apathy, low student achievement, and verbal and physical abuse by students have been shown to be primary sources of teacher stress (Blase, 1986; Blase & Pajak, 1985; Bloch, 1977; Cedoline, 1982; Evers, 1987; Farber & Miller, 1981; Ginsberg & Bennett, 1981;

Greenberg, 1984; Holland, 1982; Ianni & Reuss-Ianni, 1983; Iwanicki, 1983; Lortie, 1975; Litt & Turk, 1985; Phillips & Lee, 1980; Sakarov & Farber, 1983; Weiskopf, 1980). Indeed, a recent study of over 5,000 American and Canadian teachers reported 63% to regard student discipline problems as the most stressful factor in their work environment (Kuzsman & Schnall, 1987). Relatedly, empirical findings have identified student discipline, attitude, and abusiveness to be significant correlates of teacher burnout (Bacharach et al., 1986; Cichon & Koff, 1980; Holdaway, 1978; Olson & Matuskey, 1982).

Decisionmaking. Another major stressor for teachers is their lack of involvement in decisions that bear directly on their quality of worklife (Bacharach et al., 1986; Blase & Matthews, 1984; Cedoline, 1982; Evers, 1987; Farber, 1991; Ginsberg & Bennett, 1981; Iwanicki, 1983; Lortie, 1975; McLaughlin et al., 1986; Phillips & Lee, 1980; Ricken 1980). Indeed, participation in the organization decisionmaking process is a critical factor in maintaining worker morale, motivation, enthusiasm, self-esteem, and overall job satisfaction (French & Caplan, 1973), and in minimizing role conflict and ambiguity (Maslach & Jackson, 1984). That teachers, in general, are permitted minimal input into decisions that directly concern them (e.g., policy changes and implementation, curricula changes, student disciplinary action), has been shown to bear importantly on their declining morale, job satisfaction, locus of control and self-esteem (Cedoline, 1982;

Farber, 1991; Ginsberg & Bennett, 1981; McLaughlin et al., 1986); over time, the cumulative effects lead to job stress and, ultimately, to burnout.

Social support. Research on teacher burnout has been marked by frequent reference to the lack of support by administrators (Blase & Matthews, 1984; Evers, 1987; Farber, 1991; Farber & Miller, 1981; Greenberg, 1984; Iwanicki, 1983; Kuzsman & Schnall, 1987; McLaughlin et al., 1986; Phillips & Lee, 1980; Ricken, 1980; Sakarov & Farber, 1983). Evidence of a strong relation between supervisory support and teacher stress has been empirically supported (Bacharach et al., 1986; Litt & Turk, 1985). Moreover, there is now considerable evidence that peer, as well as supervisory support plays a major role in reducing job stress (see e.g., Cunningham, 1982, 1983; Farber & Miller, 1981; Maslach & Jackson, 1984).

Personality Factors

There is growing evidence that personality factors may explain why individuals in the same work environment, having the same supervisor, and possessing the same educational and experience backgrounds, often respond differently to the same stressors (Bloch, 1977; Cichon & Koff, 1980; Farber, 1991; Ianni & Reuss-Ianni, 1983; Mayou, 1987). Two factors considered important in an individual's ability to withstand job stress are locus of control and self-esteem.

Locus of Control. Rotter (1966) postulated individual

differences with respect to a belief in internal versus external control. Individuals who believe that certain events are a consequence of their own actions exemplify a belief in internal control; those who view the events as being beyond their control, and due more to fate, luck, or other people, demonstrate a belief in external control. There is now increasing evidence that teachers who manifest external locus of control are more likely to suffer from burnout (for a review, see Farber, 1991). These findings would appear to support recent research identifying controllability as a major factor explaining the presence of stress (Farber, 1991). Although the linkage of locus of control to teacher burnout has not been tested statistically, qualitative studies have shown that, as a consequence of decisionmaking processes within educational insititutions, teachers believe their life in the work place is controlled by others (e.g., Cedoline, 1982; Farber, 1991; Lortie, 1975; McLaughlin, 1986).

Self-esteem. Several researchers have suggested that self-esteem is strongly related to burnout (Farber, 1991; Hogan & Hogan, 1982; Ianni & Reuss-Ianni, 1983; Maslach, 1982; Motowidlo, Packard, & Manning, 1986). Hogan and Hogan argued that since most people have a strong need for social approval, any event that is perceived as social rejection may concomitantly be perceived as stressful. Relatedly, persons low in self-esteem are more threatened by rejection, and therefore more vulnerable to stress and burnout. Although anecdotal and review studies (e.g.,

McLaughlin et al., 1986; Phillips & Lee, 1980) have noted strong evidence of low self-esteem among teachers as a consequence of some antecedent factor (e.g., lack of support from administrators), followed by experienced job stress, no studies have empirically tested the impact of self-esteem on teacher burnout.

Overall, the extant literature reveals considerable evidence that organizational and personality factors bear importantly on teacher burnout. (For a more extensive and excellent discussion of these factors, see Farber, 1991.) Knowledge of their causal framework, however, is limited for several reasons. First, while the teacher burnout literature is vast, there is a paucity of systematic empirical research on the topic; most studies have been of an anecdotal nature. Second, researchers have tended to focus either on organizational factors, or on personal factors contributing to burnout; their effects in combination, and on one another, have not been examined (Handy, 1988). Third, there has been no attempt to delineate role-, task-, and environment-based organizational stress factors within one conceptual framework. Fourth, most studies of teachers have focused on burnout as a single construct. However, there is increasing evidence that the EE, DP, and PA components of burnout are differentially affected by particular organizational and personality factors (e.g., Friesen & Sarros, 1989; Leiter, 1991; Schwab & Iwanicki, 1982a, 1982b). Finally, of the few empirical studies conducted, most have involved traditional statistical procedures that did not allow for the test

of causal relations between organizational/personality factors, and teacher burnout (Handy, 1988).

The present study addressed these issues by investigating determinants of EE, DP, and PA with respect to (a) organizational factors that include role-based (role conflict, role ambiguity), task-based (work overload, classroom climate), and environment-based (decisionmaking, social support) variables, and (b) personality factors (locus of control, self-esteem) within one conceptual framework that can be tested statistically.

Method

Sample and Procedures

Participants in the study were full-time public school elementary, intermediate, and secondary teachers from two large metropolitan areas in central Canada. Using stratified proportional sampling procedures by panel, a total of 7,000 teachers were randomly selected from the membership roster of the provincial Teachers' Federation; this represented approximately 30% of the teacher population for each panel across the two urban centers. A 45% response rate resulted in questionnaires being received from 3,138 teachers (elementary, n=1242; intermediate, n=417; secondary, n=1479). Deletion of cases with ≥10% missing data (≥9 items) ultimately yielded final sample sizes of 1203, 410, and 1431 for elementary, intermediate, and secondary teachers, respectively. Because cross-validation work is planned for these data, each sample was subsequently randomly split into two; only the

calibration sample for each panel is considered in the present paper.

Preliminary analyses identified cases having multivariate outlying scores for each of the three panels (elementary, n=3; intermediate, n=1; secondary, n=1). Deletion of these cases resulted in calibration sample sizes of 599, 203, and 715 for elementary, intermediate, and secondary teachers, respectively.

A questionnaire comprising a battery of five testing instruments, and one demographic data response sheet was mailed to each selected teacher in February; an accompanying cover letter explained (a) the general purpose of the study, (b) procedures for completing the questionnaire, (c) the voluntary participation option open to each subject, and (d) the guarantee of anonymity and confidentiality associated with all responses.

Instrumentation

The test battery was designed to measure the following constructs: burnout, role conflict, role ambiguity, work overload, classroom climate, decisionmaking, peer/supervisor support, locus of control, and self-esteem. The demographic portion of the questionnaire elicited information pertaining to sex, age, years of teaching experience, marital/family status, grade(s) taught, type of work classification, and type of student most representative of one's class(es).

Burnout was measured using the **Maslach Burnout Inventory** (MBI; Maslach & Jackson, 1986); in the recently developed Educators

Survey (in collaboration with Schwab), the items have been reworded for specific use with teachers. The 22-item MBI measures three components of burnout -- EE, DP, and reduced PA. Frequency of burnout symptoms are measured on a 7-point fully anchored scale ranging from 0 to 6. Each subscale has demonstrated strong evidence of (a) internal consistency and test-retest reliability, (b) convergent validity with external criteria including personal experience (observations), dimensions of job experience, and personal outcomes, and (c) discriminant validity (for a review, see Maslach & Jackson, 1986).

Role conflict, role ambiguity, work overload, decisionmaking, and peer/supervisor support were measured using related subscales of the **Teacher Stress Scale** (TSS; Pettegrew & Wolf, 1982). All subscales of the TSS each comprise 5 items based on a 6-point Likert scale. Pettegrew and Wolf (1982) have reported strong evidence of predictive and construct validity; internal consistency reliabilities of .82, .79, .76, .76, and .84 have been reported for the role conflict, role ambiguity, work overload, decisionmaking, and peer/supervisor support subscales, respectively.

Classroom climate was measured by the **Classroom Environment Scale** (CES; Bacharach et al., 1986). The 11-item scale is structured on a 4-point Likert scale. The authors have reported an internal consistency reliability coefficient of .60.

Locus of control was measured by the **Internal-External Locus of Control Scale** (LCS; Rotter, 1966) using the 5-point Likert scale

format proposed by Collins (1974) and validated by others (Duffy, Shiflett, & Downey, 1977; Fleming & Courtney, 1983; Fleming & Spooner, 1985). The 46-item instrument measures multiple facets that are categorized as reflecting either external or internal locus of control. The LCS has had extensive experimental validation across a wide variety of populations (Lefcourt, 1976; MacDonald, 1974), albeit a modicum of validation with teachers, in particular (Friedman, Lehrer, & Stevens, 1983; Kyriacou & Sutcliffe, 1979).

Self-esteem was measured using the **Self-esteem Scale** (SES; Rosenberg, 1965). The SES comprises 10 items that are anchored to a 4-point Likert scale format. A test-retest reliability of .62 and convergent validity coefficients ranging from .56 to .79 have been reported (for an extensive review, see Byrne, 1983).

Data Analyses

Structural equation modeling procedures based on the analysis of covariance structures were used to determine theoretical relations and direction of cause among the latent variables of role conflict, role ambiguity, work overload, classroom climate, decisionmaking and peer/supervisor support, and burnout as represented by the three dimensions of EE, DP, and PA. This methodology uses a confirmatory approach to data analyses and as such requires an a priori postulation of model structure substantiated by theory and empirical research. A description of the hypothesized model to be tested follows later.

Analyses were conducted using the EQS (Bentler, 1989) program.

Assessment of fit was based on multiple criteria that reflected statistical, theoretical, and practical considerations. As such, evaluation of model fit was based on (a) the χ^2 likelihood ratio, (b) the Comparative Fit Index (CFI; Bentler, 1990), (c) the Satorra-Bentler Scaled Statistic (S-BSS; Satorra & Bentler, 1988), and (d) the substantive meaningfulness of the model (see MacCallum, 1986).

The CFI is a revised version of the Bentler-Bonett (1980) normed fit index that adjusts for degrees of freedom. It ranges from zero to 1.00 and is derived from the comparison of a restricted model (i.e., one in which structure is imposed on the data) with a null model (one in which each observed variable represents a factor). The CFI provides a measure of complete covariation in the data; a value >.90 indicates a psychometrically acceptable fit to the data. The S-BSS incorporates a scaling correction for the χ^2 statistic when distributional assumptions are violated. Its computation takes into account the model, the estimation method, and the sample kurtosis values; given a normal distribution, however, the correction factor has no impact (Hu, Bentler, & Kano, in press). The S-BSS has been shown to more closely approximate χ^2 than the usual test statistic, to have robust standard errors, and to perform as well, or better than the usual asymptotically distribution-free (ADF) methods generally recommended for nonnormal multivariate data (Bentler, 1989; Hu et al., in press).

Hypothesized Model of Teacher Burnout

Consensus of findings from the literature led to the hypothesized model presented in Figure 1. Addressing the argument that unless burnout is tested as a multidimensional construct, little progress will be made in determining its links with other theoretically related constructs (Maslach & Jackson, 1984, 1986; Perlman & Hartman, 1982), burnout was specified as a three-faceted construct with EE, DP, and PA operating as conceptually distinct constructs. This portion of the model draws from the work of Leiter (1991) in conceptualizing burnout as a cognitive-emotional reaction to chronic stress. As such, EE holds the central position since it is considered to be most responsive to various stressors in the teacher's work environment. Depersonalization and reduced PA represent the cognitive aspects of burnout; they are indicative of the extent to which teachers' perceptions of their students, their colleagues, and themselves become diminished. As shown in Figure 1, EE is hypothesized to impact positively on DP, but negatively on PA; DP is hypothesized to impact negatively on PA.

Insert Figure 1 about here

The paths leading from the organizational and personal variables to the three dimensions of burnout reflect findings in the literature. Although interpretation of the remainder of the model is straightforward, some additional explanations are in

order. First, although studies of work overload and classroom climate have been limited to burnout as an all-encompassing construct, it was hypothesized that causal flow should be directed towards the EE factor only. Second, although it was originally intended that the variable of support would comprise a single construct, preliminary analysis of the data revealed quite different response patterns to items measuring superior and peer support. On the basis of these findings, it was considered more appropriate to specify each as a separate construct. Finally, given the dichotomization of the locus of control construct, only external locus of control was considered in the model.

Results

Preliminary analyses determined that the data were univariately normal. Coefficients of skewness ranged from -1.42 to 1.58 (mean SK=-.17) for elementary teachers, from -1.61 to 1.06 (mean SK=-.25) for intermediate teachers, and from -1.89 to 1.47 (mean SK=-.17) for secondary teachers; coefficients of kurtosis ranged form -.70 to 2.66 (mean KU=.30) for elementary teachers, from -.85 to 2.67 (mean KU=.24) for intermediate teachers, and from -.71 to 5.14 (mean KU=.53) for secondary teachers. The test for multivariate normality, however, revealed significant positive kurtosis for each teacher group; normalized Mardia coefficients were 31.28, 11.84, and 40.04 for elementary, intermediate, and secondary teachers, respectively. These findings emphasize the importance of testing for multivariate normality in the analysis of covariance

structures. While it is unlikely that the maximum likelihood estimates would be affected, nonnormality could lead to downwardly biased standard errors which would result in an inflated number of statistically significant parameters (Muthén & Kaplan, 1985). Thus, final assessment of statistical fit was based on the S-BSS which corrects for this violation.

Observed data for each teacher group were fitted separately to the hypothesized model and subsequently assessed for goodness-of fit. Given evidence of inadequate model fit, the model was respecified to include additional causal paths identified by the Lagrange Multiplier Test (LM-Test) as those that would contribute most to a significantly better-fitting model. Once the final best-fitting model was determined, nonsignificant parameters, as identified by the Wald Test (W-Test), were deleted. We turn now to these findings.

Elementary Teachers

Results of model-fitting procedures for elementary teachers are summarized in Table 1. As indicated here, the hypothesized model of burnout yielded a good fit to the data (CFI=.91). Nonetheless, the LM-Test indicated that three causal paths, if incorporated into the model, would lead to a significantly better-fitting model. Thus, Model 1 was respecified to include causal paths leading from (a) work overload to external locus of control, (b) self-esteem to external locus of control, and (c) classroom climate to DP.

Insert Table 1 about here

To assess the extent to which a newly specified model exhibits an improvement in fit over its predecessor, we examine the difference in χ^2 ($\Delta\chi^2$) between the two models. This differential is itself χ^2-distributed, with degrees of freedom equal to the difference in degrees of freedom (Δdf) and can therefore be tested statistically; a significant $\Delta\chi^2$ indicates a substantial improvement in model fit. As shown in Table 1, estimation of this model (Model 2) yielded a significantly improved ($\Delta\chi^2_{(3)}$=158.17, p<.001), and well-fitting model (CFI=.93). Finally, application of the W-Test to Model 2 identified five nonsignificant causal paths. These parameters, as footnoted in Table 1, were subsequently deleted in the specification of Model 3. This respecification resulted in the same well-fitting, albeit more parsimonious model. As expected, given findings of multivariate kurtosis noted earlier, the S-BSS yielded a χ^2 value that was substantially lower than the true statistic.

The final model of burnout (Model 3) for elementary teachers is presented schematically in Figure 2; coefficients noted in the figure are taken from the standardized solution. Estimates associated with each path represent standardized regression coefficients; those presented in small circles represent error in the prediction of the related constructs from the antecedent

organizational and/or personal variables. The signs associated with all causal paths were in the expected direction.

Insert Figure 2 about here

Intermediate Teachers

As indicated in Table 2, fit of the hypothesized model for intermediate teachers was somewhat less well-fitting than for elementary teachers.(CFI=.89). However, with the respecification of two additional causal paths (classroom climate to DP; self-esteem to external locus of control), the revised model (Model 2) demonstrated a significant improvement ($\Delta\chi^2_{(2)}$=25.56, $p<.001$) and reasonable fit to the data (CFI=.90). Application of the W-Test to this model identified seven nonsignificant parameters (footnoted in Table 2). Model 3 which represented a reparameterization of Model 2 with the nonsignificant paths deleted, resulted in no change in practical fit, and minimal change to overall statistical fit. As with elementary teachers, the S-BSS yielded a lower χ^2 value than the original statistic.

Insert Table 2 about here

The final model of burnout for intermediate teachers is presented schematically in Figure 3. Consistent with findings for elementary teachers, estimates for all causal paths were in the

expected direction.

Insert Figure 3 about here

Secondary Teachers

Test statistics related to model-fitting procedures for secondary teachers are presented in Table 3. As with intermediate teachers, goodness-of-fit for the initially hypothesized model (CFI=.90) was slightly less well-fitting than for elementary teachers. The specification of three additional paths (footnoted in Table 3) in the model (Model 2) subsequently yielded one that was well-fitting (CFI=.91), and significantly improved over the initial model ($\Delta\chi^2_{(3)}$=173.32, $p<.001$). The final model of burnout (Model 3) specified the deletion of four nonsignificant paths as determined by the W-Test, and, once again, resulted in no change to practical fit, and only trivial change in statistical fit. As with the other teaching panels, the S-BSS corrected χ^2 value was substantially lower than the original statistic.

Insert Table 3 about here

The final model of burnout for secondary teachers is presented schematically in Figure 4. Although causal relations are considerably consistent with those representing elementary and intermediate teachers, four paths appear unique to secondary

teachers; these involve the impact of (a) role conflict on DP, (b) role conflict on external locus of control, (c) external locus of control on PA, and (d) work overload on EE. As with the other groups, all estimates were in the expected direction.

Insert Figure 4 about here

Discussion

Comparison between the hypothesized and final models of causal structure related to multiple dimensions of burnout demonstrated remarkable consistency across the three teaching panels. Three common findings prevailed. First, of the 14 causal paths specified in the hypothesized model (Figure 1), six were statistically significant for elementary, intermediate, and secondary teachers. These paths reflected the impact of (a) classroom climate on EE, (b) decisionmaking on both self-esteem and external locus of control, (c) self-esteem and DP on PA, and (d) EE on DP. Also worthy of note was the significant influence of peer support on self-esteem for elementary and secondary teachers. That this path was not significant for intermediate teachers, is likely a function of the smaller number of subjects; further testing with a more equivalent sample size is needed to test this conjecture. Second, two paths, not specified a priori, (classroom climate→DP; self-esteem→ external locus of control), proved to be essential components of the causal structure for each teacher group; they

were therefore added to the model. Finally, two hypothesized paths (role ambiguity→PA; superior support→self-esteem) were not significant and were subsequently deleted from the model. A summary of causal paths common to elementary, intermediate, and secondary teachers is presented schematically in Figure 5.

// Insert Figure 5 about here

Overall, discrepancies in causal paths across teaching panels were small, the greatest difference being between teachers of high school students and those teaching at the lower grades. Close examination of the final models for elementary and intermediate teachers reveals discrepancy related only to missing paths (work overload→external locus of control; EE→PA) for intermediate teachers; these paths were unique to elementary teachers. As noted earlier, however, this finding may be a function of sample size.

In sum, five primary differences emerged between elementary/ intermediate, and secondary teachers, and these involved the way in which work overload, role conflict, and external locus of control were linked to aspects of burnout. First, whereas for elementary/ intermediate teachers, role conflict generated feelings of EE, this condition resulted from work overload for secondary teachers. Second, whereas work overload led to perceptions of external locus of control for elementary/intermediate teachers, role conflict stimulated this perception for secondary teachers. Third, whereas

increased role conflict resulted in EE for elementary/intermediate teachers, it led to increased DP for secondary teachers. Fourth, whereas increased EE "caused" perceptions of diminished PA for elementary/intermediate teachers, this causal flow was not apparent for secondary teachers. Finally, although the impact of external locus of control on perceptions of PA was significant for secondary teachers, it was not so (p=.06) for elementary/intermediate teachers; this marginal finding for the latter group, however, may again be a function of sample size, or be a sample-specific artifact of the data. We turn now to a more specific discussion of between- and within-network relations involving each of these modeled variables.

Between-network Causal Structure

Organizational variables. As suggested by the literature, **classroom climate** proved to be a major variable in the nomological network of teacher burnout. In addition to the hypothesized flow from classroom climate to EE, its impact on DP was strong and consistent across groups. These findings suggest that as the social climate of the classroom deteriorates, teachers become emotionally exhausted and develop increasingly negative attitudes towards their students, and the teaching profession in general. In light of escalating class sizes, student apathy, and incidents of verbal and physical abuse by students, it is not surprising that teachers report student discipline problems as the most stressful factor in their work environment (Farber, 1991; Kuzsman & Schnall, 1987).

As hypothesized, **decisionmaking** was another key, albeit indirect determinant of burnout. Across all three teaching panels, this variable demonstrated a significant positive influence on self-esteem, and a significant negative impact on external locus of control. It seems apparent, as noted over a decade ago by Lortie (1975), that the nonparticipation of teachers in decisions that bear directly on their daily work environment leads both to a decline in self-esteem and to strong feelings of external control by others. Over time, these effects take their toll, manifesting themselves first in terms of job stress and ultimately, in perceptions of diminished personal accomplishment.

Although the variables of **role conflict** and **work overload** were also important components of the causal structure, their operation within the network differed considerably between elementary/ intermediate, and secondary teachers. Whereas **role conflict** triggered the physical response of EE for elementary and intermediate teachers, it stimulated the cognitive response of DP for secondary teachers. Emotional exhaustion for the latter group stemmed from **work overload**, rather than **role conflict**.

A second intriguing comparison with respect to these two variables was shown by their reverse impact on external locus of control; whereas elementary/intermediate teachers demonstrated augmented feelings of external locus of control when confronted with increased **work overload**, the same perceptions derived from the presence of increased **role conflict** for secondary teachers.

Of the two support variables in the hypothesized model, only **peer support** was found to make a significant contribution to causal structure. On the basis of these findings, it appears that the presence or absence of administrator support bears little on a teacher's self-esteem; of more import is the support of his/her colleagues who share the same work environment.

Finally, findings from this study suggest that, within the teaching profession, **role ambiguity** does not operate as a determinant of burnout.

Personality variables. Perhaps one of the most interesting and enlightening findings of this study was the prominance of personality variables within the nomological network. These results are the first to empirically substantiate the import of personality factors that may, indeed, hold the key to why some teachers are more prone to burnout than others, albeit they share the same work environment.

Of particular interest is the saliency of **self-esteem** across all three teaching panels. It seems apparent that **self-esteem** is a critical and controlling factor in the predisposition of teachers to burnout. In addition to having an important direct effect on perceptions of personal accomplishment, **self-esteem** appears to function as an essential mediator variable through which effects of environment-based organizational factors filter.

The other personality variable, **external locus of control**, was found also to be an important variable in the nomological network.

Although it proved to be an important intermediary variable for secondary teachers in their perceptions of personal accomplishment, this was not evident for the other teacher groups; more construct validity work is needed before its status can be determined.

Within-network Causal Structure

As postulated by Leiter (1991), EE appears to be the key element in burnout structure. As hypothesized in Figure 1, EE had a highly significant impact on DP which, in turn, had a moderately strong negative inflence on perceptions of PA; these effects were consistent across teaching panels. The hypothesized negative influence of EE on perceptions of PA was small, and was limited to elementary teachers. These findings support Leiter's (1991) contention that EE provides the background within which teachers assess the people they serve (students, administrators, parents), as well as their own accomplishments within their work environment.

Conclusion

Findings from this study elucidate at least four important factors related to the nomological network of burnout. First, the organizational variables of role conflict, work overload, classroom climate and decisionmaking, and the personality variable of self-esteem are critical determinants of particular aspects of burnout for teachers regardless of grade level taught; although external locus of control was also an important variable in its own right, its direct effect on burnout was limited to secondary teachers. Second, the variable of support is evidently provider-specific.

Thus, to combine measurements of peer and superior support into a single construct serves only to mask the true effeccts of each in the causal process. Third, the three dimensions of burnout, EE, DP, and reduced PA, must be modeled as separate constructs; each is the target of particular predictors in the between-network structure, and each plays a specific role in the within-network structure of burnout. Finally, although role conflict and work overload are important components of the burnout network, their causal pattern differs substantially for teachers of high school students, and those teaching students at the lower grades.

From a practical perspective, findings make it apparent that the most logical and cost-effective means to resolving the problem of teacher burnout rests with educational policymakers. Given (a) the rapidly increasing incidence of teacher burnout, (b) the escalating costs associated with the syndrome, and (c) the obvious ineffectiveness of stress management programs designed to help teachers develop more adequate coping skills, it is evident that current educational policy bearing on teachers' work environments must change. Until such organizational changes are implemented, the work environment of teachers will continue to be overly stressful, teachers will continue to perceive the quality of their worklife as less than optimal, and teacher burnout will continue to drain on the public purse.

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Table 1

Test Statistics for Hypothesized Model - Elementary Teachers

Model	χ^2	df	S-BSS[a]	CFI[b]	$\Delta\chi^{2c}$	Δdf^d
1 Initial	1345.77	441	---	.91	---	---
2 Addition of 3 significant paths[e]	1187.60	438	---	.93	158.17	3
3 Deletion of 5 nonsignificant paths[f]	1200.95	443	1097.11	.93	13.35	5

[a] Satorra-Bentler Scaled Statistic

[b] Comparative Fit Index

[c] Difference in χ^2

[d] Difference in degrees of freedom

[e] work overload→external locus of control; self-esteem→external locus of control; classroom climate→depersonalization

[f] superior support→self-esteem; work overload→emotional exhaustion; role conflict→depersonalization; role ambiguity→personal accomplishment; external locus of control→personal accomplishment

Table 2

Test Statistics for Hypothesized Model - Intermediate Teachers

Model	χ^2	df	S-BSS[a]	CFI[b]	$\Delta\chi^{2c}$	Δdf^d
1 Initial	781.05	441	—	.89	—	—
2 Addition of 2 significant paths[e]	755.48	439	—	.90	25.56	2
3 Deletion of 5 nonsignificant paths[f]	766.20	446	706.32	.90	10.72	7

[a] Satorra-Bentler Scaled Statistic

[b] Comparative Fit Index

[c] Difference in χ^2

[d] Difference in degrees of freedom

[e] self-esteem→external locus of control; classroom climate→depersonalization

[f] superior support→self-esteem; work overload→emotional exhaustion; role conflict→depersonalization; role ambiguity→personal accomplishment; external locus of control→personal accomplishment; emotional exhaustion→personal accomplishment; peer support→self-esteem

Table 3

Test Statistics for Hypothesized Model - Secondary Teachers

Model	χ^2	df	S-BSS[a]	CFI[b]	$\Delta\chi^{2c}$	Δdf^d
1 Initial	1679.72	440	—	.90	—	—
2 Addition of 3 significant paths[e]	1506.40	437	—	.91	173.32	3
3 Deletion of 4 nonsignificant paths[f]	1514.09	441	1097.11	.91	7.69	4

[a] Satorra-Bentler Scaled Statistic

[b] Comparative Fit Index

[c] Difference in χ^2

[d] Difference in degrees of freedom

[e] role conflict→external locus of control; self-esteem→external locus of control; classroom climate→depersonalization

[f] superior support→self-esteem; emotional exhaustion→personal accomplishment; role conflict→emotional exhaustion; role ambiguity→personal accomplishment

Figure Captions

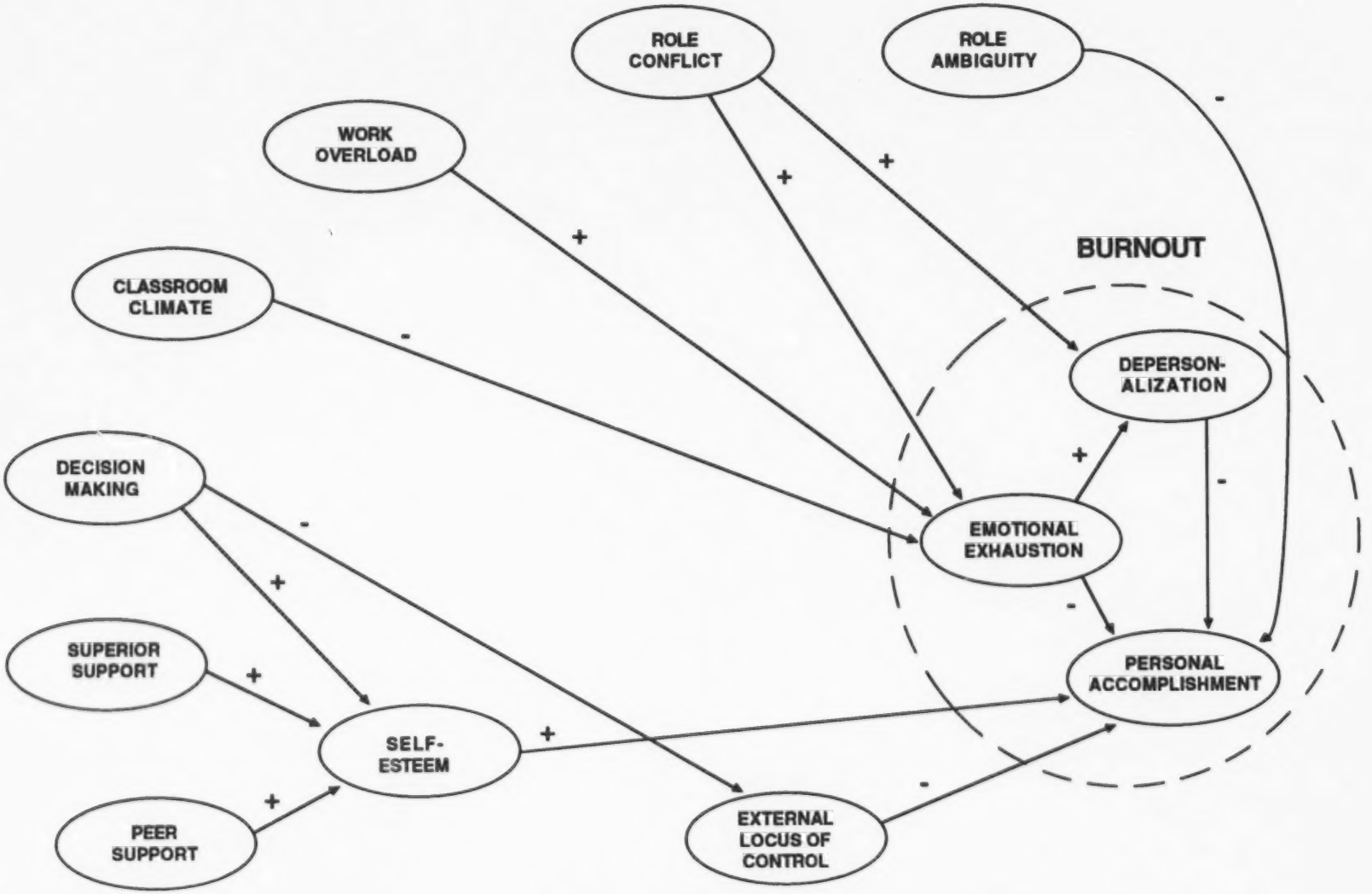
Figure 1 Hypothesized Model of Teacher Burnout

Figure 2 Final Model of Burnout for Elementary Teachers

Figure 3 Final Model of Burnout for Intermediate Teachers

Figure 4 Final Model of Burnout for Secondary Teachers

Figure 5 Common Causal Paths to Burnout Across Elementary, Intermediate, and Secondary Teachers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DEPERSON-ALIZATION
DECISION MAKING
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PERSONAL ACCOMPLISHMENT
SELF-ESTEEM
PEER SUPPORT
EXTERNAL LOCUS OF CONTROL
+
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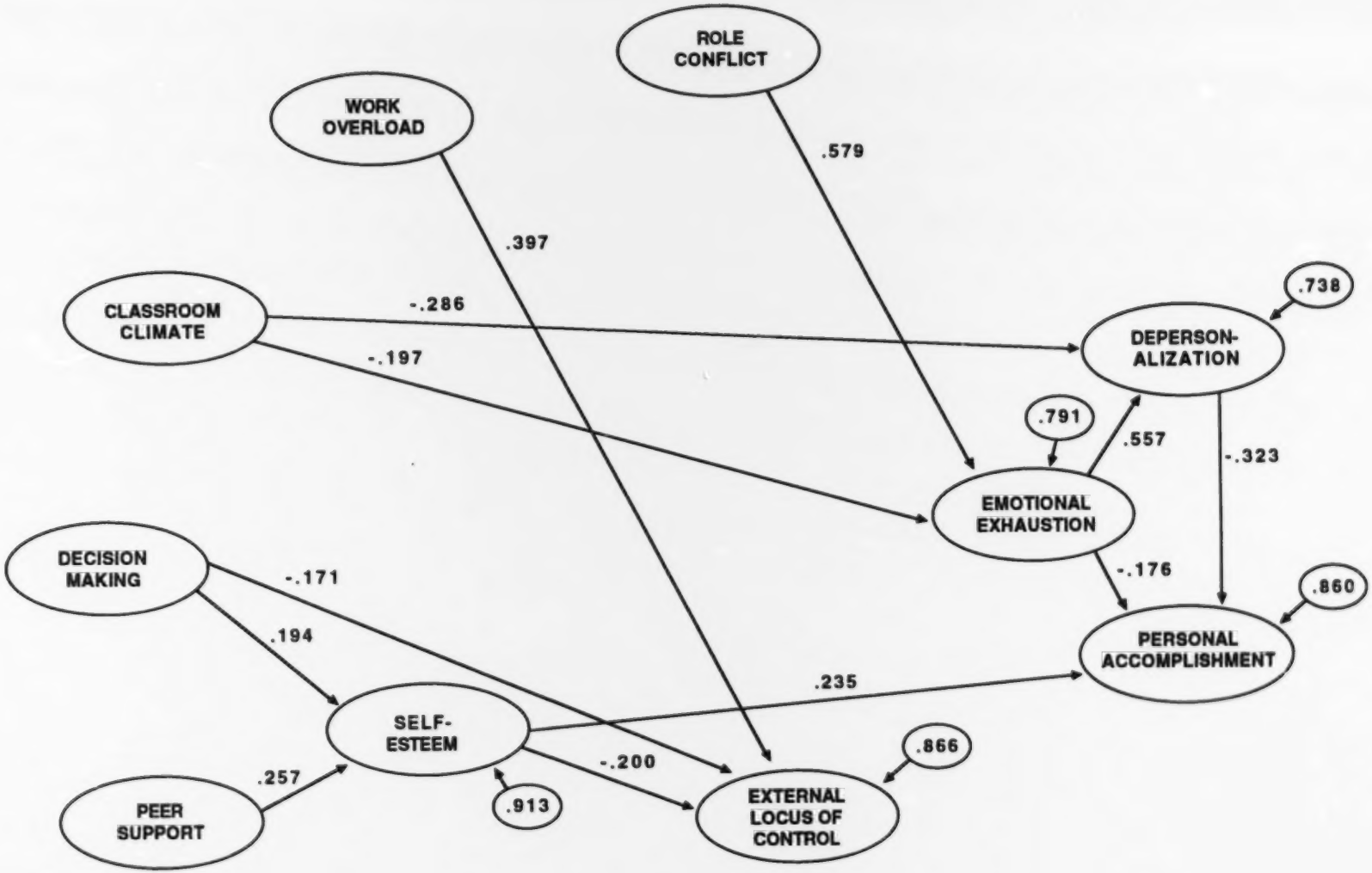
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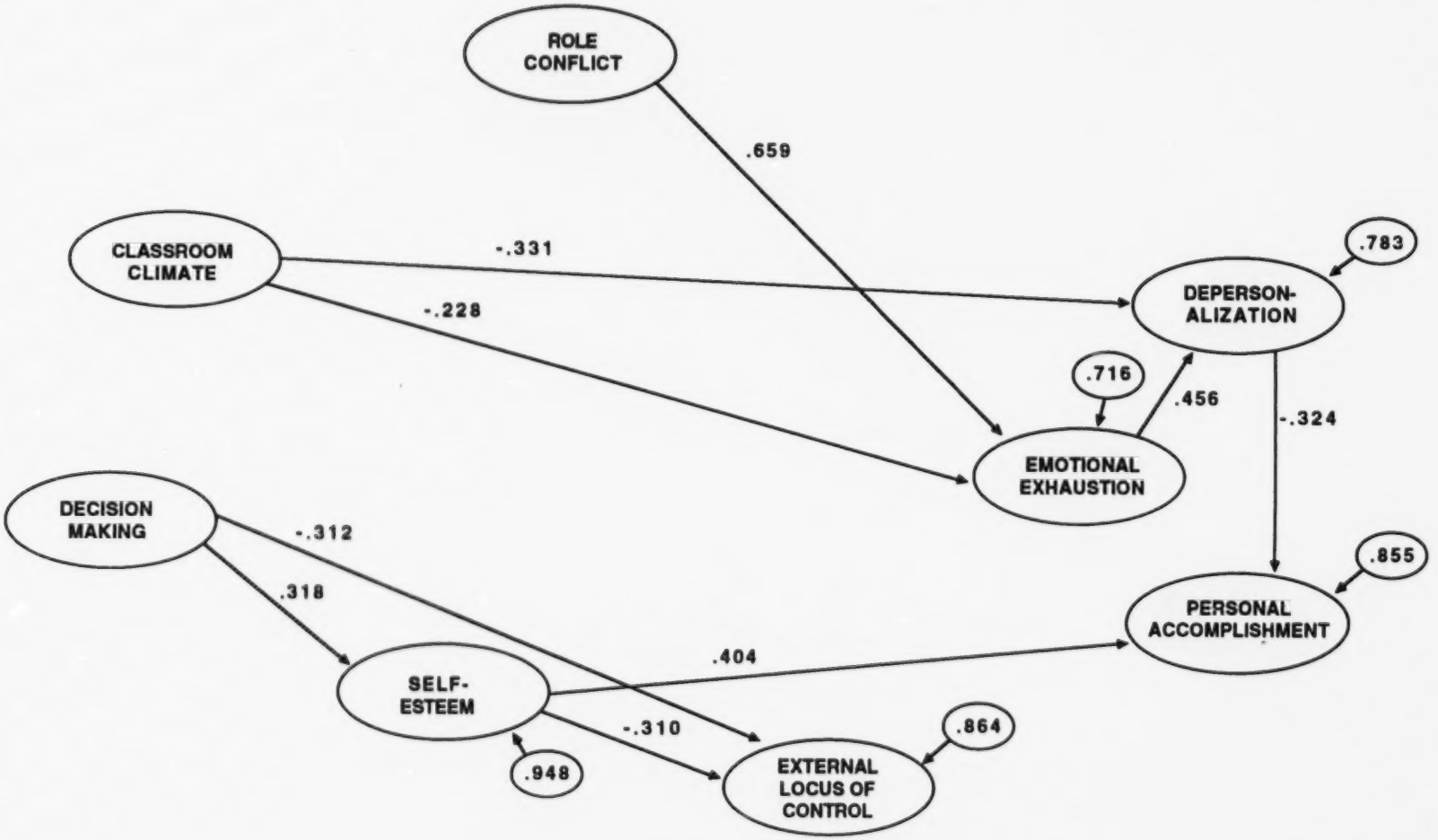
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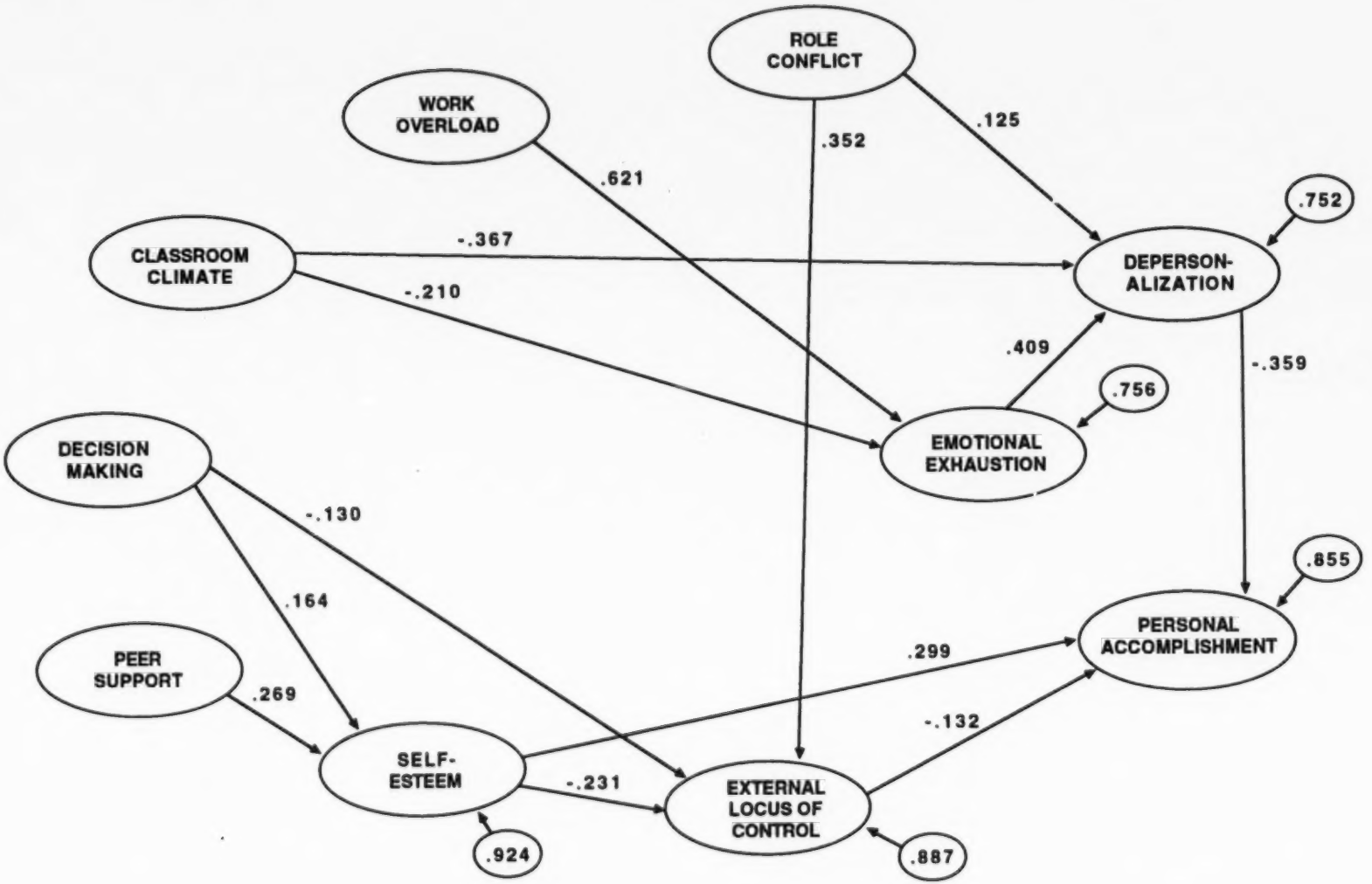
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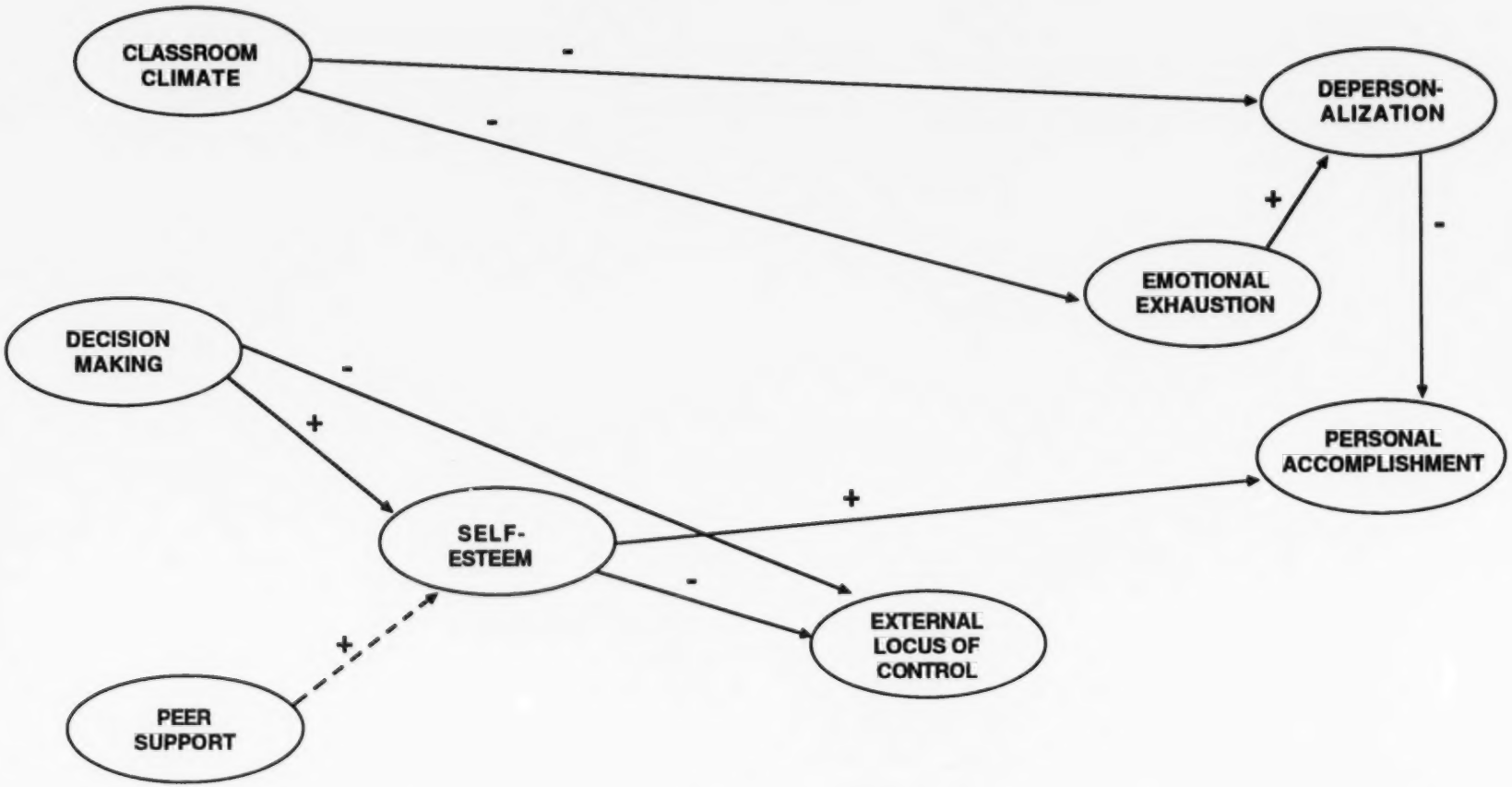
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DECISION MAKING
PERSONAL ACCOMPLISHMENT
SELF-ESTEEM
EXTERNAL LOCUS OF CONTROL
PEER SUPPORT
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